L.A. Clarke and Son

Spotsylvania County, Virginia
Superfund Program Site Fact Sheet

Type of Facility: Former Wood Preserving Facility

Contaminants: Creosote and Components.

Funding: Enforcement Financed

Site Description and History

The L. A. Clarke and Son site is in Spotsylvania County, Virginia, approximately two and a half miles south of Fredericksburg. The site encompasses approximately 40 acres. Creosote was used at the site for wood preserving operations between June 1937 and June 1988, except from April 1979 to June 1980. Until 1976 the property was owed by the Richmond, Fredericksburg, and Potomac Railroad (RF&P) and was leased out to L A Clarke and Sons, Inc. Wood preserved at the site was used for such products as railroad ties, telephone poles, and fence posts.

The process consisted of injecting the wood with a mixture of creosote and coal tar under high temperature and pressure. The heat and pressure forced the creosote mixture into the cells of the wood. Excess mixture was drained from the lined pits. Overflow from the concrete lined pits was drained into an earthen pit. Excess water from the process was sprayed on the storage yard to control dust or was discharged into the drainage ditches. A spray evaporation system was used in later years of the operation to meet State Water Control Broad requirements.

EPA detected soil, sediment, ground water, and surface water contamination of the site and the adjoining property during the Remedial Investigation (RI). The contamination consists of the by-products of creosote: polynuclear aromatic hydrocarbons (PNAs), benzene, and dense non-aqueous phase liquids (DNAPL). The contamination resulted from facility operations, spills, waste streams entering drainage ditches, and on-site disposal of waste products. As of 1988, sixty-three homes were located within a 4,000-foot radius of the site, and 1,500 people lived within one mile of the site. The shallow contaminated aquifer underlying the site has only limited use at the present time as a source of drinking water but has the potential for wider use in the future, due to increased development in the area. Also, the shallow aquifer discharges to Massaponax Creek.

The site is divided into five operable units (OUs). The Remedial Investigation/Feasibility Study (RI/FS) for OU-1 through OU-4 was completed in March of 1988, and the Record

of Decision (ROD) was signed on March 31, 1988. In July 1989, a Consent Decree was signed between EPA and the RF&P. In September 1995, RF&P signed an Administration Order on Consent to complete the ground water investigation, propose cleanup plans, and design and implement the selected action to contain the plume of contaminated ground water at the site.

OU-1 covered the site security and fencing around the site. The remedial design took place in February and March 1989. Remedial action began in September 1989 and was completed in September 1993.

OU-2 covered site decontamination, demolition, removal of the process buildings, removal of railroad ties, removal of scrap metal, drums, and the on-site lagoon. Remedial design started in September 1989. Remedial action commenced in August 1990 and was completed in May 1997, when the lagoon removal was complete. This included removal and off-site disposal of wastewater, emulsion and sludge, liner material, and contaminated soil from underneath the impoundment liner.

OU-3 encompassed site water control and treatment of water in ditches on site. Much effort in this phase was spent trying to control beaver action on site. Remedial design started in March 1990 and was completed in December 1992. Remedial action began in December 1992 and was completed in February 1993.

OU-4 encompasses remediation of shallow soils and sediments on site (less than 1.5 feet in depth). Remedial design was started in March 1990 and completed in September 2000. Remedial action began in July 2001. By fall 2001 sediments were removed from the drainage ditches and wetland areas beside Massaponax Creek.

OU-5 covers the contaminated ground water and Dense Non-Aqueous Phase Liquids (DNAPLs) present on site. The RIFS began in September 1989 and is currently ongoing in the investigation phase. This work will be completed as a non-time critical removal. Activities at the site designed to evaluate the nature and extent of ground water contamination have included the installation of additional monitoring wells and periodic sampling of ground water data that will be used to evaluate potential remedial alternatives for the site.

Threats and Contaminants

The shallow aquifer underlying the site is contaminated with creosote derivatives from former site activities. Sediments, soils, and surface waters may still be contaminated with creosote compounds and by-products, including polynuclear aromatics (PNAs) and benzene. Potential health risks may exist via inhalation of contaminated vapors or dust, or accidental ingestion or direct contact with contaminated soil, sediments, or surface waters. Ecological risks may exist that could also pose additional human risks if contaminated fish and waterfowl are consumed.

Current Site Status

Ground water monitoring is being conducted to determine if further action is required at the site.

Community Relations and Concerns

A site tour and meeting were conducted on September 13, 1990. In January 1991, a meeting was held to obtain information to update the existing Community Relations Plan. On April 25, 1991, an information session was held for the public. EPA issued two press releases in April 1992 on the lagoon issue.

VDEQ Representative	Information Repository
Thomas D. Modena, P.E. Remedial Project Manager Virginia Department of Environmental Quality P. O. Box 10009 Richmond, VA 23240-0009 (804) 698-4208, Fax (804) 698-4234 E-mail: tdmodena@deq.virginia.gov	County Administrative Office 1902 Courthouse Road P.O. Box 99 Spotsylvania, VA 22553 (703) 582-7010